Vol. 2—No. 1 APRIL, 1947.

JOURNAL

of the

NEW ZEALAND ASSOCIATION OF BACTERIOLOGISTS

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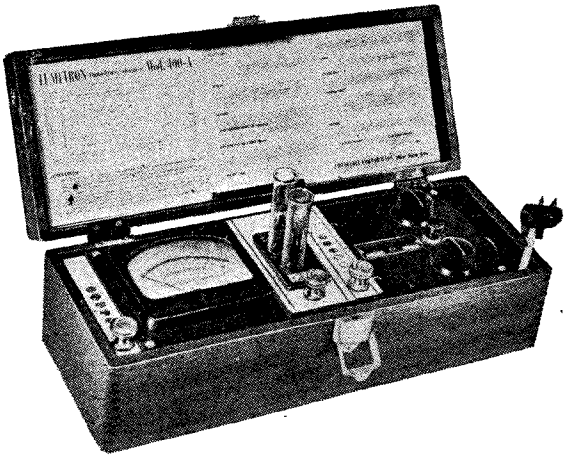

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CONTENTS

Communications regarding this JOURNAL should be sent to the Editor, Mr. D. Whillans, c/o Pathological Department, Public Hospital Auckland, C.3.

All monies should be paid direct to the Secretary-Treasurer of the New Zealand Association of Bacteriologists (Inc.), Mr. S. O. Jarratt, c/o Pathology Department, Public Hospital, Palmerston North. Cheques should be made payable to the New Zealand Association of Bacteriologists (Inc.).

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NEW ZEALAND ASSOCIATION OF BACTERIOLOGISTS

Vol. 2—No. 1 APRIL, 1947.

EDITORIAL

The recent examination for the Certificate of Proficiency in Bacteriology and Clinical Pathology has shown more clearly than ever the wide scope of this examination and the breadth of knowledge required of the examinee. With the rapid increase in knowledge in all branches of our work, it is becoming a serious matter for any candidate for examination to know how much he may reasonably be expected to master, and it will be necessary for the authorities to adopt a Syllabus much more defined than the present official one. Members of the Association hope that the syllabus proposed by a special sub-Committee of the Association will be adopted by the authorities and that due consideration will be given to the proposed Syllabus for an Intermediate Examination.

With such a growth in the scope and amount of Clinical Laboratory work, it is essential that more heed be given to the training of senior and junior workers both in District and in Base Laboratories. Under the press of expansion and the increase in work due to the Social Security legislation, the time available for study and the learning of new techniques is small or in most cases non-existent, so that the keen worker is forced to learn after hours and study at home when he is already tired from a very full day of work. While on the face of it, it would appear that such time spent on study during working hours is lost, this policy administered fairly must lead to far greater efficiency. This, in itself, will save much time as well as providing the worker with a true theoretical and practical background without which his skill and knowledge will never reach a truly satisfactory level.

COUNCIL MEETING, MARCH, 1947

A Council Meeting was held in the rooms of Dr. P. P. Lynch, Kelvin Chambers, The Terrace, Wellington, on Saturday, March 1st, 1947, at 11 a.m.

There were present Mr. E. L. F. Buxton, (Chairman) and Messrs. N. J. Ellison, J. J. G. Peddie, D. H. Adamson, G. W. McKinley, D. Whillans and S. O. Jarratt.

The minutes of the previous meeting were read and confirmed.

The following Junior Members were elected:—Miss J. R. Wilson and Mr. A. L. Schwass, both of the Nelson Hospital Laboratory.

The resignation of Miss Beth. Page was received with regret.

The report from the sub-committee on the proposed Intermediate Examination was then considered at length, being finally agreed upon after the lunch adjournment. The following is the proposed syllabus:—

PROPOSED SYLLABUS FOR INTERMEDIATE EXAMINATION

1.—The Operation and Maintenance of Laboratory Equipment:

All types of sterilisers; the microscope; centrifuges; stills; thermo-regulated apparatus; filters; hydrogen ion apparatus (visual); colorimeter; balance.

2.—Preparation of Glassware and Reagents:

Types of laboratory glassware including graduated glassware; the cleaning of glass; the disposal of cultures and specimens.

The preparation and sterilisation of:—

(a) Specimen containers; (b) Pasteur pipettes; and (c) culture media.

The preparation and use of routine stains and solutions.

3.—Bacteriology:

An elementary knowledge of bacterial taxonomy; an elementary knowledge of the following including practical recognition:—Staphylococci; Streptococci, including S. pneumoniae; and enterococci; the Neisseria group; Diphtheroid organisms, particularly C. diphtheriae; H. influenzae; the typhoid, dysentery, food-poisoning group; the coliform group; Br. abortus; M. tuberculosis; Vincent's organisms.

The routine bacteriology of water, milk and milk products.

4.—Urinalysis:

Deposit; albumin; bile; specific gravity; acetone; sugar

(qualitative and quantitative); urea (hypobromite).

5.—Antibiotics:

The storage and dispensing of antibiotics.

6.—Haematology:

The collection of specimens, excluding venipuncture; an elementary knowledge of the origin and development of cells; the technique of the complete blood count; a knowledge of the differential count excluding opinion on the anaemias, leukaemias, etc., but ability to recognise such abnormalities; reticulocyte and platelet counts; haematocrit technique; sedimentation rate; coagulation and bleeding times; Paul-Bunnell test; blood grouping and compatibility test.

7.—Examination of puncture fluids:

Cytology of such fluids. Bacteriology and chemistry as under separate sections.

8.—Biochemistry:

Blood; sugar, T.N.P.N., and icterus index.

C.S.F; sugar, chlorides, protein.

Faeces; Occult blood.

Gastric analysis.

9.—Miscellaneous.

A thorough knowledge of aseptic technique as applied to laboratory work and to personal safety. Antidotes. Emergency treatment. The packing of specimens and the postal regulations.

It was proposed that this syllabus be forwarded to the next Annual Conference for its approval and disposition, and that a copy be sent to the Director General of Health and all Pathologists.

The following amendment to the proposed syllabus for the Certificate was approved. 4. Immunity . . . after antigenic factors add The Bordet-Gengou reaction.

ANNUAL CONFERENCE, 1947.

Mr. D. H. Adamson, on behalf of the Christchurch Laboratory Staff, stated that work was well in train for the Annual Conference 1947, which is to held in Christchurch on Friday and Saturday, July 18th and 19th, was well in hand. The Conference is to open at 9.30 a.m. on Friday 18th July, and it is hoped to present about ten papers during the two days. A reception in the form of a dinner will be held on Friday evening.

The meeting closed at 5.15 p.m.

REFERENCES TO RECENT LITERATURE

Prothrombin and Fibrolysin. Science. 1946. 104. 461. (A new theory); *A Coliform Bacterium* with the complete antigens of Salmonella Newing-

ton. J. Immunology. 1946. 54. 275. (It would appear to be possibly a link between the typical Bact. coli, atypical coliform and Salmonella organisms, and the typical Salmonella types); The simple estimation of *blood ketones* in diabetic acidosis. J. Lab. Clin. Med. 1946. 31. 1162. (By employing the three salts in powder form used in Gearhardt's urine-acetone test, severe ketonaemia can be rapidly and quantitatively detected); *Secondary B. pyocyaneus infection* in meningitis following intrathecal penicillin therapy. J. Lab. Clin. Med. 1946. 31. 1113. (Those of us who have encountered it are not likely to fall into the trap of labelling this organism a laboratory contaminant when found in C.S.F. For others the article is impressive.) Acetic acid *inhibition of gram-negative bacilli* in culture media. J. Bact. 1946. 52. 353; Detection of tubercle bacilli by the fluorescence technique. B.J. Tuberc. 1946. 40. 98. (No doubt will be a routine when materials become available.) *Haematologic Calculator.* Am. J Clin. Path. 1946. 16. 193. (Description of an extremely useful and easily manipulated device designed by one of our own colleagues.) Special slide for making *blood films.* Am. J. Clin. Path. 1946. 16. 195. (Schilling's "Spreader" gives more reliable results than a full width spreader, but this centrally notched one also indicates when the centre of the film has been reached.) Photo-electric colorimeter, Preparation of teaching materials. The dawn of medical technology. Privileges and duties of associates. A haemoglobin standard. Penicillin determinations. A rapid gram stain for tissues. Included in Am. J. Med. Tech. Sept. 1946. V 12. No. 5. A collapsible metal *stirrer.* Science. 1946. 104. 326. (Appears satisfactory for use in flasks, etc. and could be driven by hand or from a small motor.) The feeding and breeding of *laboratory animals.* J. Hyg. 1946. 44. 491 & 501. (1. An excellent article, describing a reasonably cheap, labour saving diet in cube form giving good growth results, but for some reason not yet determined not suitable for breeding stock. The cost at Hampstead, London in June 1945 was per day for rats about 1/10d and for mice 1/30d. The animals need no water and need be fed only every few days. Unfortunately the size of the cubes has been omitted. It would seem that cubes should be very acceptable to these gnawing rodents. (2) Rabbits are shown to grow well on a diet in pellet form supplemented by water (always necessary) and hay. The total food cost at Hampstead in the Autumn of 1945 was about ½d. per day for Dutch rabbits. There seems no objection, on humane grounds for feeding rabbits on this diet when their habits of cutting cocksfoot and eating the seed and straws, of gnawing bark and of drinking at streams is remembered.) Laboratory findings in *Enteric group fevers* in the M.E. Forces. J. of Hyg. 1946. 44. 430. (A comparison with the procedures in two of the N. Z. General Hospitals in M.E.F. (1942-44) and in C.M.F. (1944-45) may be of interest:—1. Blood films examined for malarial parasites and estimation of total leucocytes by lymphocyte percent given. 2. Widal results, Field's staining method and leucocyte counts were confirmed. 3. Methods of Blood Culture identical. 4. Subcultures made after 1, 2 and 4 days from both bottles on to both MacConkey's and blood agar plates to overcome results of possible contamination and also because blood agar subcultures usually agglutinate better. Loeffler's serum also helped to produce specific agglutinins. 4. Further investigations and findings practically identical. 5. Colonial form and sugar reactions given were confirmed. 6 Faeces investigations identical, except that MacConkey's plates only were used after a short and inconclusive trial of tetrathionate broth enrichment medium. In 1944-45 Selinite F enrichment medium became available and was used with amazingly spectacular results. 7. Urine was incubated 6-8 hours, then a loopful from the top and one from the deposit were cultured —there were few isolations).

D.H.A.

BIOCHEMICAL METHODS. PART 1. BLOOD AND C.S.F.

J. B. BROWN

(From the Pathological Laboratory, Public Hospital, Auckland.)

A summary of methods used in the Auckland Hospital Laboratory.

Containers

(1) Oxalate tubes are prepared by adding one drop of boiling saturated potassium oxalate (neutral A. R.) to a test-tube and air-drying below 80 C. The oxalate present will treat 8 - 9 ccs. of blood and is the recommended anticoagulant for general use.

(2) Fluoride tubes contain 100 mgms. of weighed dry neutral sodium fluoride, will treat about 7 ccs. of blood, and are used for the preservation of specimens for blood sugar.

(3) Plain tubes are dry and chemically clean and for the collection of specimens of C.S.F. are sterile as Bacteriology is usually performed on the same specimen.

Methods of Collection

Venous Blood is taken with a dry sterile syringe and needle and ejected into the appropriate tube. Anticoagulants are immediately and thoroughly mixed with the blood. For blood specimens under paraffin "oxalate" tubes containing paraffin oil are used. The blood is taken using the minimum of suction with a dry syringe lubricated with a trace of paraffin and ejected through the needle under the surface of the paraffin. The blood is mixed with oxalate by rolling the tube between the palms of the hands.

Capillary Blood is taken from the cleaned finger tip into micro pipettes, usually of 0.1 cc. capacity and added directly to the diluent. For the comfort of the patient this method is where possible preferred to the venous technique.

Where possible specimens are preserved in the ice chest and gross bacterial contamination is avoided. The figures quoted for keeping quality refer to room temperature.

The following chart gives a summary of methods with normals and particulars on collection which should not be considered hard and fast except for the methods quoted The writer will welcome from members any criticism and discussion which this paper may provoke.

REFERENCES

(1) Modified. Ann. de Med. Leg. 1936. 16. 113. (2) Peters & Van Slyke. Quant. Clin. Chem. 1932. Vol 2. Chapt. 7. (3) J. Biol. Chem. 1925. 63. 461. (4) Peters & Van Slyke. Loc cit. p. 674. (5) Ditto. p. 836. (6) Nicholson. Lab. Med. 2nd ed. p. 216 (modified). (7) Am. J. Clin. Path. 1944. 14. 21. (8)

BIOCHEMICAL METHODS. PART 1. BLOOD AND C.S.F.

ESTIMATION	METHOD	NORMALS (in mgms./100 ccs. unless otherwise stated.)	COLLECTION	Quantity min./opt. ccs.		Keeping Qualities	REMARKS
Alcohol	Nicloux (1)	Nil	Oxalate	1	5	6 hrs.	Keep tube tightly corked. Beware of alcohol in syringe and needle.
Alkali reserve	Van Slyke (2)	50-80 cc. per 100 cc.	Oxalate under paraffin	5	10	2-3 hrs.	Serum under paraffin may be used.
Calcium	Clark & Collip (3)	9-11	Plain	5	10	Serum keeps days	Separate serum from clot within 2-3 hrs. after collection.
Carbon monoxide	Sayers & Yants (4)	Nil	Oxalate	3	6	2-3 hrs.	Keep tube tightly corked or use blood under paraffin.
Chlorides (plasma)	Van Slyke & Sendroy (5)	570-620 as NaCl.	Oxalate under paraffin.	3	6	24 hrs.	Serum under paraffin may be used.
Chlorides (C.S.F.)	Ditto	700-760 as NaCl	Plain	1	2	Days	
Cholesterol	Bloor (6)	120-200	Oxalate or plain	1	5	Days	Whole blood may be used, e.g. from fingertip.
Fragility	Fennel (7)	0.42-0.32% saline	Plain	4	10	24 hrs.	Mix gently while clotting.
Icterus index	Meulengracht (8)	4-6 units	Oxalate or plain	3	6	24 hrs.	Patient should be fasting. Avoid haemolysis.
Phosphatase	King & Armstrong (9)	"Acid" under 4 units. "Alkaline" 4-10 units	Plain	3	6	24 hrs.	Plasma may be used.
Phosphorus	Briggs (10)	2-4	Oxalate or plain	5	10	Serum or plasma keeps days.	Separate serum or plasma within 2-3 hrs.

Protein (serum)	Kingsley (11)	Total protein 6.5-8.2% Albumin 4.6-6.7% Globulin 1.2-2.3%	Plain	5	10	24 hrs.	
Protein Plasma		Fibrinogen 0.3-0.6%	Oxalate	2	6	24 hrs.	
Protein (C.S.F.)	Ayer mod. (12)	20-45	Plain	1	2	Days	If uncontaminated.
Salicylate	Brodie et al (13)	Nil.	Oxalate or plain	2	5	24 hrs.	
Sugar (Macro)	Folin (14)	Fasting 80-120 Non-fasting 80-180	Oxalate Fluoride	1 1	5 5	2 hrs. 3 days	Plus 1 drop 40% formalin keeps 18 hrs.
Sugar (Micro)	ditto. (modified)	ditto.	Special diluent	0.05	0.1	3 days	
Sugar (C.S.F.)	ditto.	40-75	Plain	1	2	Days	If uncontaminated.
Sulphonamides	Bratton & Marshall (15)	Nil.	Oxalate	1	5	48 hrs.	
Thiocyanate	Barker (16)	Nil.	Plain	5	10	48 hrs.	Invalidated by oxalate.
T.N.P.N.	Folin Wu (17)	20-40	Oxalate	2	5	24 hrs.	Serum gives slightly lower values. Beware "Haematology" oxalate which contains nitrogen.
Urea	Archer & Robb (18)	20-40	Oxalate	1	5	24 hrs.	As for T.N.P.N. Invalidated by fluoride, which causes enzyme inhibition.
Uric acid	Folin & Dennis (19)	2-4	Oxalate	2	5	Days	Serum may be used.
Van den Bergh	King et al (20)	0.1-1.0	Oxalate	3	6	4 hrs.	Serum may be used.
Weltman	Levinson (21)	Band 6-6.5	Plain	1	5	24 hrs.	

Harrison. Chem. Methods in Clin. Med. 2nd ed. p. 259. (9) (a) King, Haslewood & Delory. Lancet. 1937. 1. 886. (9) (b) Gutman & Gutman. Gen. Clin. Invest. 1938. No. 4. 473. (10) King. Biochem. J. 1932. 26. 292. (11) J. Biol. Chem. 1940. 133. 731. Rec. Adv. Med. 9th ed. p. 384. (12) Brown & Cole. J. N.Z. Ass. of Bact. 1946. 1. 33. (13) J. Pharmacol & Exper. Therap. 1944. 80. 114. (14) Harrison. Loc. cit. p. 142-46. (15) J. Biol. Chem. 1939. 128. 537. (16) J.A.M.A. 1936. 106. 762. modified. (17) Rec. Adv. Med. 7th ed. p. 414 (18) Harrison Loc. cit. p. 80. (19) Harrison. Loc. cit. p. 385. (20) King, Haslewood & Delory Loc. Cit. p. 890. (21) J. Lab. Clin. Med. 1937. 23. 53.

EXAMINATION FOR CERTIFICATE OF PROFICIENCY IN BACTERIOLOGY AND CLINICAL PATHOLOGY,

February, 1947.

Held in the Medical School, Dunedin, commencing February 26th.

Examiners: Sir Charles Hercus
Dr. P. P. Lynch
Dr. E. F. D'Ath.

PAPER

(3 hours).

1. Give in brief outline the life cycle of the parasite which causes hydatid disease. What is the Casoni test? And how are the reagents used in the test prepared?
2. What procedures are used in the laboratory investigation of an outbreak of food poisoning? What organisms are commonly associated with these outbreaks?
3. Describe how the following tests are carried out:—
    1. Blood sedimentation rate.
    2. Blood coagulation rate.
    3. Fragility of red cells.
    4. Reticulocyte count.
    5. Platelet count.
4. What is the nature of and the source of the material used for prophylactic inoculation against the following diseases:—
    1. Smallpox.
    2. Diphtheria.
    3. Typhoid fever.

PRACTICAL BACTERIOLOGY

(3 hours).

1. Report upon the specimens of hairs (1a), scales (1b), and culture (1c) for fungoid infection. Detail your technique.

2. Slides are from a sputum from a patient suspected of a T.B. lesion. Report on your findings. Detail your staining technique.

3. Examine the specimens of faeces, 3a, 3b, 3c, for the presence of parasites; report on your findings. Describe one good concentration method of treating faeces for amoebic cysts.

4. Tubes "X" contain the cells (in saline) and the serum from a patient requiring a blood transfusion. He belongs to Group "A." Tubes "C," "D" and "E" contain the cells (in saline) and sera of three voluntary donors. Which of them may be used, and to what Blood groups do C, D and E belong? Describe your technique; state the reasons for your decision; carefully label your slides. ("C", "D", "E" were Groups A. O. and B.).

5. This is a sub-culture from a blood culture from a female patient who, on the fourth day after delivery developed a high temperature accompanied by a rise in pulse-rate. Report upon the cultures. What further bacteriological investigations should be carried out?
(Culture a haemolytic streptococcus.)

6. This culture is of a prepared strip of gauze used in testing the efficiency of a hospital autoclave. Report your findings. How would you carry out such a test? What are the essential points to note in autoclaving hospital dressings and other material? (Culture was a gram positive bacillus).

PRACTICAL EXAMINATION B

(3 hours).

1. Identify the following slides. (No differential count required).
   (a) Lymphocytic leukaemia.
   (b) Benign tertian malaria.
2. Identify the following slides.
   (a) Macrocytic anaemia.
   (b) Chronic myelogenous leukaemia.
3. Detail the preparation of (samples provided).
   (a) 5% glucose (pyrogen free).
   (b) Thrice normal saline (pyrogen free).
4. How would you prepare 1% procaine in isotonic saline?
5. How would you prepare the following? (Sample provided).
   (a) Penicillin cream.
   (b) Ophthalmic penicillin 1000 units per cc.
   What is the diluent for penicillin sterilatus B.P.
6. Give the technique of preparing this specimen from post-mortem as a museum specimen. (The specimen was a small heart displayed to show structure and mounted in mounting fluid).
7. What is this article and how is it used? (Micrometer eye piece).
8. Prepare the following from the piece of tubing provided.
   (a) Pasteur pipette.
   (b) Wright capsule.
   (c) Glass spreader.
9. Describe the use and care of this specimen and outline the theory of dark ground illumination. (Specimen was an oil immersion lens.)
10. How would you sterilise the following.
    (a) Rubber gloves.
    (b) Talcum powder.
    (c) Sulphonamide powder.
    (d) Vaseline.
    (e) Olive oil.

ORAL EXAMINATIONS

Sir Charles Hercus.

The bacteriology of waters and milks; the isolation and identification of the Salmonellas; Vi antigen; Bacteriophage; pH of media with reference to selective methods; staining techniques; complement; the nutritive value of media constituents; care and use of laboratory animals; diseases of laboratory animals and the gestation period of laboratory animals; Br. abortus; Streptococci with reference to Lancefield's precipitin test and Griffith's serological methods; laboratory experience generally.

Dr. P. P. Lynch.

The estimation of calcium, phosphorus and protein; the general precipitation of proteins; the stability of tungstic acid; the collection of bullock serum and the preparation of Loeffler's medium; the preparation of Loewenstein's medium; blood sugar and the sources of error in its estimation; the preparation of sera for the Wassermann test; the preparation of complement; can other sera be used for complement; B. anthracis; B. pestis; the examination of rats for pathological changes therein; the Haemophilus group with special reference to influenzal meningitis; diphtheria prophylactic inoculations; the theory of pH and the use of indicators; the significance of eosinophilia.

Dr. D'Ath.

The sharpening of microtome blades; the cleaning of laboratory glassware; pyrogens; Seitz filtering and its disadvantages for intravenous work; sintered glass; molar and normal solutions; oxalate collection tubes for haematology and the stability of oxalate; indices; normal and molar solutions; colorimetric methods; pH; red and white diluting fluids; Benedict's solution; the accuracy of blood sugar estimations; prothrombin time technique; substitutes for ordinary thromboplastin; cooked meat media and the isolation of Cl. tetani; the staining of histology sections; Ehrlich's haematoxylin and Van Giesen's stain; constructional requirements for a still; the principle of the Somogyi blood sugar method.

HERE AND THERE

Christchurch:

Numerous trophozoites of E. histolytica were found in the purgative stools of a German P.O.W. of World War 1 who had not been out of New Zealand since 1919. This was last year, and recently no amoebae could be found in six purgative specimens after the completion of treatment. He had been labelled as "functional" among other things for his host of complaints.

Another soldier of the recent war was found to harbour numerous unidentified structures in purgative stools. The smallest of these resembled spirochaetes, the largest being about 14 microns in diameter, having no apparent nucleus and very rapidly shooting out pseudopod-like structures. Some were intra- and some extra-cellular. Has anyone ever seen anything like this? None of us has. None could be found after anti-amoebic treatment.

Wanganui:

Miss E. M. Partridge, B.Sc., has arrived from England to take up the position of senior assistant at the Wanganui Hospital Laboratory. She hails from Christchurch, and was on holiday in Europe when war broke out. During her five years at Charing Cross Medical School Laboratory she had many experiences of the flying bomb.

Miss M. Dick, a trained nurse who has spent months in this Laboratory, has now joined the staff of the Auckland Hospital Laboratory to study for her Certificate.

The Bacteriologist, Mr. E. L. F. Buxton, will go to the Auckland Hospital Laboratory for a three-month refresher course after Easter. We are hoping to introduce him to the wiles of the printing press.

Auckland:

Another addition to the staff is Miss F. D. Mulligan of Gisborne. She has spent four years in that busy Laboratory and has come to Auckland to work for her Certificate.

The Staff of the Auckland Hospital Laboratory has been busy recently starting a Laboratory at the Cornwall Hospital. With Dr. F. J. Cairns as the Pathologist, it includes as staff Misses Corsbie, Smaill and Scott, and Mr. Philip. This Laboratory now includes the central media and solution rooms.
Mr. Ian Cole has replaced Mr. Minifie at Greenlane Hospital Laboratory, which is now attached to the Cornwall Laboratory.

The Staff of all the Auckland Hospital's Laboratories are conducting a "Food for Britain" campaign of their own, and have already supplied parcels to all members of staff of the Radcliffe Infirmary Laboratory and its associated Laboratories. They have sent ten parcels to the Laboratory of St. Bart's, London, and will be sending more immediately, and are proposing to send to St. Thomas' shortly. They commend this project to all who have no relatives or friends in England at the present time and would like to help. The letters of thanks received have been most heartfelt.

SUBSCRIPTIONS for the year 1947-1948 are due on April 1st, and are payable to the Secretary-Treasurer of the Association, Mr. S. O. Jarratt, c/o Pathology Dept., Public Hospital, Palmerston North, on that date. As the finances of the Association are at present strained, members will assist the smooth running of our affairs by sending their subscriptions promptly. Exchange should be added to cheques.

PUBLICATION FUND.—The receipt of the sum of one guinea from an anonymous donor has brought this up to £14/13/-. When sending your subscription consider what the JOURNAL means to you, and what you can afford to help decrease the debt on the printing plant. The Editor has in mind a number of ambitious projects which must wait until sufficient money is available to make them possible.

ESSAY COMPETITION.—The rules were published in the January JOURNAL, page 52, and it is urged on all Junior members that their entries are essential to the success of the competition. Closing date May 31st, 1947; entries marked "Essay Competition" to be in the hands of the Secretary by that date.

AMENDMENT TO RULES.—The attention of all members of the Association is called to rule 11 (a) which requires the Secretary to give notice in writing to all members of any proposed amendment of rules SIXTY days prior to the meeting, in this case the Annual General Meeting.

REMITS to the Annual General Meeting must be in the Secretary's hands in sufficient time so that he can circularise all members in order that they may exercise their right to vote either in person or by proxy. If members wish to vote by proxy they should study the relevant part of the book of rules.

Printed and Published by D. Whillans, 31 Woodside Rd., Mt. Eden, Auckland, S.1, for the Association of Bacteriologists (Inc.), whose Registered Office is the Pathology Dept., Public Hospital, Wellington.

THREE TIMELY BOOKS OF VITAL AND IMMEDIATE INTEREST TO EVERYONE CONCERNED WITH DISORDERS OF THE BLOOD

THE Rh FACTOR

By

Edith L. Potter, M.D.

Assistant Professor of Pathology in the Department of Obstetrics & Gynaecology, University of Chicago School of Medicine.

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This authoritative manual will be of vital interest to those desiring **practical** knowledge of the Rh factor and its implications in (1) transfusions, (2) the care of women during pregnancy and delivery, and (3) the pre- and postnatal handling of infants. A summary of the more important aspects is followed by detailed discussion of the discovery of the Rh factor, its antigenic properties, its role in certain pathologic changes in the foetus and newborn, and its importance in intragroup transfusion reactions. Diagnosis of congenital hemolytic disease, means of recognizing its manifestations, and methods for determining Rh status and demonstrating evidence of immunization are fully described and illustrated.

CLINICAL HAEMATOLOGY

By

Maxwell M. Wintrobe, M.D., Ph.D.

Professor of Medicine, University of Utah, School of Medicine, Salt Lake City, Utah; Formerly Associate in Medicine, Johns Hopkins University, Associate Physician, Johns Hopkins Hospital, and Physician-in-Charge, Clinic for Nutritional, Gastro-Intestinal, and Hemopoietic Disorders, Baltimore, Maryland.

Second Edition, Thoroughly Revised, 1946. 862 Pages, Illustrated with 197 engravings and 14 plates, 10 in Colour.

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